THE CHEMIST

APRIL 1952 VOLUME XXIX No. 4

—*Chemical & Engineering News*

DR. E. H. VOLWILER, Hon. AIC, receives congratulations from Dr. W. B. Hendrey, Chairman of the Chicago AIC Chapter.

(See page 166)

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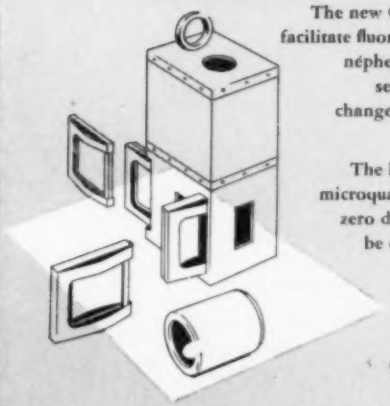

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SCHEDULED FOR EARLY PUBLICATION

International Education in Industry, R. M. Strain & Paul Kolachov.
What Industry Expects of You in Production, Peter J. Kornett, F.A.I.C.
Sixteen Years of Chemical Education in China, Dr. Peter P. T. Sah
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What Industry Expects of You in Product Development, Dr. S. Sussman, F.A.I.C.
The Ohio Award to Dr. Martin H. Fischer, F.A.I.C.
Washington Chapter Honor Award to Dr. Gordon M. Kline, F.A.I.C.
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Annual Meeting Committees

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Dr. Sidney D. Kirkpatrick
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Dr. M. J. Kelley

Read the Annual Meeting Program on page 143. Note the list of interesting subjects and the speakers who will present them. Then plan to attend this meeting, if possible. Registration fee for members (before May first) is $3.00; non-members $4.00; students $2.00.

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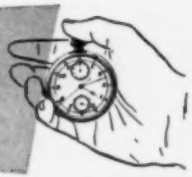

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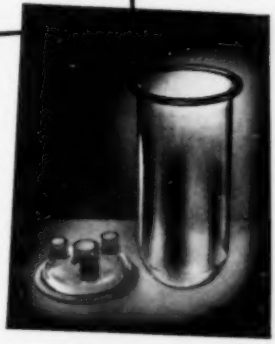

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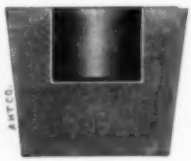
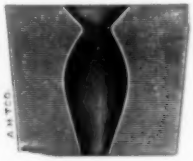
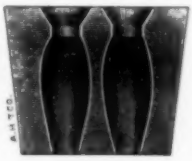


Semi-Solid.
Vertical cross-section showing recessed top.



One-Hole.
Vertical cross-section showing one Hough fusiform opening.



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Twenty-Ninth Annual Meeting

The American Institute of Chemists, Inc.

Hotel Commodore, New York, N. Y.

Wednesday and Thursday, May 7-8, 1952

PROGRAM

The Program Committee for the 1952 meeting of the Institute has brought together a group of men whose thoughts are directed to bettering the achievements of chemists. The members have the opportunity to meet with this group to discuss the broad aspects of the profession. The experience of the Institute is that those interested in this broad viewpoint make the greatest contribution to the science of chemistry and to the chemical industry. An unusual opportunity has been afforded by periods which permit the members to get together for informal and friendly discussions.

Wednesday, May 7th

9:00 a.m. **Registration and Greetings** (West Ballroom Foyer)

9:30 a.m. **After-breakfast Coffee-and-Doughnuts** (Room B-C) (No charge)

10:30 a.m. **Annual Business Meeting** (West Ballroom)

NOTICE

The twenty-ninth Annual Business Meeting of The American Institute of Chemists will be held at the Hotel Commodore, New York, N.Y., at 10:30 a.m. on Wednesday, May 7, 1952 for the election of officers and councilors and for such other business as may be properly presented.

—Lloyd Van Doren, Secretary

AGENDA

"As the Institute Stands Today," Retiring President, L. H. Flett
Introduction of the Incoming President, Dr. Lincoln T. Work
Report of the Secretary
Chapter Reports
Committee Reports
Election of Officers and Councilors
New Business

12:00 noon **Informal Luncheon** (West Ballroom)
All invited. Tickets **$4.00**

2:15— 5:15 p.m. **Concurrent Sessions A, B and C**

Concurrent Session A (West Ballroom)

RECENT PROGRESS

2:15 p.m. **Chairman,** Dr. Nolan B. Sommer, Market Development Manager, Jefferson Chemical Company, Inc.

2:30 p.m. "—Pharmaceuticals," Dr. Charles J. Kern, Assistant to the President, Wyeth, Inc.

3:30 p.m. "—Foods," Dr. John H. Nair, Assistant Director of Research, Thomas J. Lipton, Inc.

3:30 p.m. "Agricultural Chemicals," G. V. Taylor, Director of Sales Development, Spencer Chemical Company

4:00 p.m. "—Plastics," Dr. E. E. McSweeney, Battelle Memorial Institute

4:30 p.m "—Textiles," Dr. A. L. Peiker, Associate Director, Application Research, Calco Chemical Division, American Cyanamid Company

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Concurrent Session B (Room B-C)

PUBLIC RELATIONS FOR THE CHEMIST

2:15 p.m. **Chairman:** Robert L. Taylor, Vice President, Hill and Knowlton, Inc.

2:30 p.m. "The Chemist and His Profession," Dr. Henry B. Hass, Director of Research, Central Research Laboratory, General Aniline & Film Corp.

3:00 p.m. "The Chemist and His Industry—Chemical Companies are People," Dr. William G. Bywater, Director of Research, S. B. Penick & Company

3:30 p.m. "The Chemist and the Public," Kenneth E. Mulford, General Manager, Industrial Chemicals Department, Atlas Powder Company

4:00 p.m. "The Chemist and His Country," Dr. George F. Rugar, Assistant Manager, Technical Service Division, Diamond Alkali Company

4:30 p.m. "The Community Relations of Chemical Industry," D. H. Killeffer, Consultant, Crestwood, Tuckahoe, New York

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Concurrent Session C (East Ballroom)

THE SITUATION IN CHEMICAL LITERATURE

2:15 p.m. **Chairman, J. W. Perry,** Massachusetts Institute of Technology; Director Scientific Literature Department, Bjorksten Research Laboratories

2:15 p.m. "The Crisis in Compiling and Correlating Chemical Literature," J. W. Perry

2:45 p.m. "Books on Chemistry—What the Educators Want," Dr. Albert Harold Blatt, Professor of Chemistry, Queens College

3:15 p.m. "Books on Chemistry—What Industry Wants," A. W. Deller, Chemical Engineer and Patent Counsel, New York, N.Y.

3:45 p.m. "Books on Chemistry—The Publisher's Viewpoint," Fred P. Peters, Vice President, Reinhold Publishing Corporation

4:15 p.m. "Problems in Covering the Periodical Literature of Chemistry," Dr. John R. Bowman, Head, Department of Research in Physical Chemistry, Mellon Institute of Industrial Research

4:45 p.m. "The Technical Editor's Approach to an Expanding Literature," D. O. Myatt, Managing Editor, **Industrial & Engineering Chemistry**

5:30— 6:30 p.m. **Social Hour** (West Ballroom)

INVITATION

The publishers of the magazine **Industrial Laboratories**, invite all those who have registered to attend a Social Hour in the West Ballroom from five-thirty to six-thirty o'clock.

Thursday, May 8th

8:15 a.m. **Officers' Breakfast** (Room B-C) Tickets **$3.00**
(Get-together Breakfast for Officers, Councilors, Representatives, and Committee Chairmen of Chapters and of the national organization)

8:30 a.m. **Registration Continued** (West Ballroom Foyer)

9:15—11:30 a.m. **Concurrent Sessions D and E**

Concurrent Session D (West Ballroom)

EMPLOYER-EMPLOYEE RELATIONS

9:15 a.m. **Chairman** Dr. George L. Royer, Assistant Director of Application Research, Calco Chemical Division, American Cyanamid Company.

9:30 a.m. "Intra-Organization Problems," Francis H. Bebee, Assistant to Division President, Interchemical Corporation, Textile Colors Division

10:00 a.m. "Orientation of Research Activities," Raymond Stevens, Vice President, Arthur D. Little, Inc.

10:30 a.m. "Problems in Adjustment of Research Chemists," Dr. Emil Ott, Director of Research, Hercules Powder Company

11:00 a.m. "The Organization of a Research Laboratory," Dr. Robert M. Burns, Chemical Coordinator and Director of Chemical and Metallurgical Research, Bell Telephone Laboratories

11:30 a.m. "The Responsibility of Chemists in Patent Matters," Dr. Francis X. Murphy, Patent Department, Legal Department, Charles Pfizer & Company, Inc.

Concurrent Session E (Room B-C)

INDUSTRIAL SAFETY AND HYGIENE

9:15 a.m. **Chairman**, S. F. Coneybear, Vice President, Evans Research and Development Corporation

9:30 a.m. "Safety and Hygiene in the Laboratory," Howard H. Fawcett, Safety Supervisor, Research Laboratory, General Electric Company

10:00 a.m. "Safety and Hygiene in the Plant," Dr. L. T. Fairhall, Lecturer in Toxicology and Public Health, Yale University

10:30 a.m. "Safety and Hygiene in the Use of Radioisotopes," John C. Pennock, Tracerlab

11:00 a.m. "Industrial Problems in Skin Cancer," Dr. Ernest L. Wynder, Department of Medicine, Memorial Hospital Center for Cancer and Allied Diseases

11:30 a.m. "Shipping Regulations for Chemicals," T. C. George, Assistant Chief Inspector, Bureau of Explosives, American Association of Railroads

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12:00 noon **Honor Recipients' Luncheon** (West Ballroom)
Tickets **$4.00**

Toastmaster: **AIC President Lincoln T. Work**

Speaker: **Dr. Gustavus J. Esselen**, (Hon.AIC), Vice President, U.S. Testing Company, Inc., Manager, Esselen Research Division; Chairman of AIC Committee on Honorary Membership

Subject: "Rewards and Responsibilities."

All are invited to meet AIC Honor Recipients

2:15 p.m. **General Session** (West Ballroom)

CHEMICAL RESEARCH—MANAGEMENT VIEWPOINT

Chairman, Dr. Sidney D. Kirkpatrick, Editorial Director, **Chemical Engineering** and **Chemical Week**

2:30 p.m. "The Consultant's Organization," Dr. Foster D. Snell, President, Foster D. Snell, Inc.

3:00 p.m. "Research Returns from Inventions and Patents," Dr. Robert C. Swain, Vice President, American Cyanamid Company

3:30 p.m. "Research for an Industry," Roy W. Peet, Secretary, Association of American Soap and Glycerine Producers, Inc.

4:00 p.m. "Facts for Promotion," Dr. Paul D. V. Manning, Vice President, International Minerals & Chemical Corporation

4:30 p.m. "Research Reports to Management," Dr. Randolph T. Major, Vice President and Scientific Director, Merck & Company, Inc.

6:00— 7:00 p.m. **Reception** (West Ballroom)

INVITATION

Allied Chemical & Dye Corporation has invited all who register or who attend the Medal Banquet to a reception in honor of Dr. Fred J. Emmerich.

7:00 p.m. **Gold Medal Banquet** (East Ballroom) Tickets **$7.00**

Toastmaster: **Dr. S. D. Kirkpatrick**, General Chairman, 1952 Annual Meeting
Editorial Director, **Chemical Engineering and Chemical Week**

Speaker for the Medalist: Retiring **President Lawrence H. Flett**, "The Bright Day of Chemistry"

Presentation of the Honorary Membership Certificate: Incoming President **Lincoln T. Work**

Presentation of the Gold Medal: **Dr. Harry L. Fisher**, Chairman, Jury of Medal Award, AIC

Medal Acceptance Address: **Dr. Fred J. Emmerich**, President, Allied Chemical & Dye Corporation. "Science and Human Relations"

PLEASE NOTE

Non-Members are invited to register and to attend sessions and social activities at the Annual Meeting.

It is important that advance registration be received, so that adequate accommodations can be provided. Your tickets will not be mailed, but will be held in your name at the Registration Desk for you to receive on the day of the meeting. Please send your reservations for all the events you wish to attend, before May first. Your money will be returned, if cancellations are received within twenty-four hours of the event.

Dress for the Medal Banquet is optional. Tables seat ten. If you have a preference with whom you wish to be seated, please indicate this, and we shall try to arrange it. Please make checks payable to **The American Institute of Chemists.**

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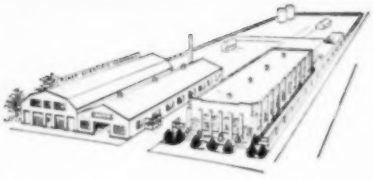

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EDITORIALS

What to Do at Meetings

Dr. John R. Bowman, F.A.I.C., Head, Department of Research in Physical Chemistry, Mellon Institute, Pittsburgh, Pa.

MANY articles have been written on the presentation of papers at meetings of scientific societies. These go into elaborate detail on the organization of material, the preparation of slides, public speaking, and even suggestions on rehearsal before presentation. At most of the large scientific meetings only a few per cent of those in attendance give scheduled papers and the presentation occupies only a small amount of the speakers' time in attendance. With risk of over-exercising the editorial prerogative of preaching, we will set down some suggestions as to what to do at such meetings when not actually presenting a paper.

Nominally and officially, one of the main reasons for attending meetings is to hear the presentation of papers. This is important, but by no means the most important activity offered, and it can be done in right ways and wrong ways. Only rarely is it advantageous to sit continuously through all papers of the division covering one's specialty. Most of the material presented will be in print in a few months. A better plan is to attend sessions of divisions less closely allied to one's primary interest. This provides a broadened outlook and information that would probably not be obtained in the routine perusal of the literature.

When one plans such interdivisional coverage, he should make a close study of the program in advance and prepare a detailed agenda for himself, covering essentially all the time he expects to be in attendance at the meeting. This schedule is never to be followed rigorously, but is rather to provide a base load to fall back upon when more worthwhile activities are not available; more of this later.

Discussion following presentation of papers always adds vitality to technical sessions. Do not be afraid to ask stupid questions! They flatter the speaker and all who know better, do the interrogator no harm, and often bring out points which other hesitated to ask.

One of the less generally known activities at most large scientific meetings is the committee business sessions. Many of them are open meetings at which any regularly registered member of the meeting is welcome to appear and present his views on any subject within the jurisdiction of the committee. This is an excellent way to get gripes off the chest and certainly far better than

ineffective complaints to friends and colleagues.

Other activities included in nearly all meetings are the group meals. These are generally good for making personal contacts and should be a part of the agenda prepared in advance. At risk, however, of incurring the wrath of local committees, we suggest that tickets not be purchased until near the deadline to provide the possibility of arranging more profitable eating occasions than the regularly scheduled group meals.

All these activities are essentially formal. As Dr. C. L. Brown has aptly brought out in last month's editorial, personal contacts are perhaps the most important object to be gained by attendance at scientific meetings. One of the principal advantages in attending divisional meetings is the possibility of meeting the authors after they have presented their papers and discussing details with them. This is not a fearsome task. Almost without exception scientists are willing and anxious to discuss their work with anyone who has a sincere interest in it. In this way, there is available information particularly slanted to one's problems. This is equally true regarding authors of papers outside the field of specialty of the member. When entering a new research problem, a ten-minute talk with an expert in the field is often equivalent to a week of library searching for background material. The expert can at least give leads as to where such material is to be found.

Authors of papers in many cases prepare a moderate number of mimeographed copies of their papers. These are usually available on request to the author at the meeting. This is no substitute for reasonable notetaking, but is a source of detailed information not generally recognized by those in attendance.

If personal contact with the authors is not feasible at the meeting, the medium of correspondence is a fair substitute. Nearly all authors are glad to answer specific inquiries concerning their work by correspondence. Even if the member has no particular questions but is impressed by the high quality of the paper, it is a kind courtesy to write the author following the meeting complimenting him on his work.

The give-and-take of information is, of course, the main basis of personal contacts at meetings. Toward this end, industrial chemists should have a clear understanding with the management of their corporations concerning which material they are free to discuss and what must be held confidential. Industrial laboratories are generally willing to release most of the fundamental information they have at hand and withhold essentially only the commercial details. Free exchange of this fundamental information is essential to good scientific meetings.

There is the eternal question of remembering names. Anyone who has attended meetings more or less regularly over several years will, if on the job, have made literally hundreds of acquaintances. In seeing each of these only every few years, the remembering of names becomes hopeless. This has given rise to the acceptance of asking names outright much more freely than would be specified by conventional social etiquette. It is now perfectly proper to walk up to a member of a meeting, adjust your glasses, stoop over and read his name on his badge. Feel no embrrassment!

Just as personal conversations should take precedence over attendance at divisional meetings, so small parties for meals, if properly constituted, should take precedence over the group meals. In this regard a considerable duty falls upon the host members—those who reside in the city where the meeting is held. They can to great advantage round up small groups and take them to the otherwise obscure good restaurants in the city. The same is true of out-of-towners who know the city. We know of one chemist who makes a detailed study of an eating place guidebook before visiting any convention.

In certain types of research today, the concept of a research team has grown to be essential. In attending scientific meetings, however, it is always bad and often bad to the point of being serious. Association with intimate friends and colleagues from your home city is an outright waste of time at technical meetings. We know of one group of four men from a large industrial laboratory who were inseparable during the entire course of a meeting. They shared adjoining double rooms at a hotel, heard the same papers together, ate together, and moved as an oblivious block through the crowds. Their employer would have gained more information by sending any one of them to the meeting alone.

Some may claim there is an exception when two people from the same city spend considerable time together on the excuse that their city is large and that they see each other only at national meetings away from home. This is only an apparent exception. It should be the function of the local section in their home town to bring them together.

Summing up, I believe that the most important object of attending a large scientific meeting is the making of personal contacts which can lead to discussion then and correspondence in the future. This far outweighs anything formally scheduled in the printed program.

New Book Exhibit: Planned by Bernard Silkes, F.A.I.C., of the Technical & Scientific Book Center, Pittsburgh, at the Hotel Commodore, New York. Those attending the AIC Annual Meeting are invited to see it.

The Office of Research Adviser to Management

Raymond Stevens, F.A.I.C., Vice President, Arthur D. Little, Inc.
30 Memorial Drive, Cambridge, Mass.

IN THE rapid development of industrial research management theory over the past half-century, much concern has been given to the direction of the individual researcher, the working *homo sciens*. There has been continuous endeavor to give him free play for talents and ideas, while applying an appropriate check-rein to his tendency to pursue a theory beyond the bounds of economic feasibility.

At times a rigid over-organization has been the result of the attempt to temper the enthusiasm of the chemist for his ideas, and has resulted in the suppression of his peculiar talent for invention and prevented the dynamic growth of an entire research project. We have heard only too often the murmured, and sometimes loud, complaint that the administration of a company is too businesslike, too crossed with the dollar sign, to understand the importance of research being carried out in its own way. One answer to this problem has been the taking of the director of research into the administration. Doubtless this is to be encouraged; it poses in many instances, however, the further questions: What kind of scientific worker can safely represent the research idea to the business man and, concomitantly, the business idea to his colleagues in the laboratory? And, is not a brilliant scientist wasting his energies who must develop talents in two worlds simultaneously?

The question of the relation of the researcher to the industrial organization will probably never evoke a final answer, but interest in it is perennial and vital.

One new development crystallizes a naturally developed practice into a form of office within the company. The new office foresees a science director who directly advises the administration of the company on scientific ideas, techniques and trends developing within the company's own laboratories and personnel and also in the general world of science, but who takes on no responsibility for administration of either company or personnel. Naturally, such a position calls for a director of outstanding scientific capacity, but in detaching him from concern for direct administrative problems, while giving him stressed importance in relation to the administration, he can speak with unusual authority and directness. His office, standing *inter sed supra*, represents another attempt to give due and appropriate consideration to the free play the researcher must have in

order to carry out his work, to have ideas, and to create, while at the same time giving to management assurance that a uniformly high level of creative science is maintained, unhampered by any rigid line organization or practice.

Speaker: Richard L. Kenyon, F.A.I.C., European associate editor of *Chemical & Engineering News & Industrial & Engineering Chemistry,* before the Royal Institute of Chemistry, official professional qualifying body for chemists in Great Britain, on February 20th. His subject was "The American Chemical Profession." The organization and work of THE AMERICAN INSTITUTE OF CHEMISTS, the American Chemical Society, the American Intsitute of Chemical Engineers, and other professional bodies in the US, were discussed. Other aspects considered were chemical training, the chemists' professional-economic status and the place of the chemist in the growing American chemical industry.

Appointed: William B. Baker, F.A.I.C., as director of product development of The Armour Laboratories, Chicago 9, Ill. He is in charge of the technical development of pharmaceutical products. He was formerly associated with Calco Chemical Division of American Cyanamid Company, Laboratories Uribe Angel, and E. R. Squibb & Son.

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The Utilization of Scientific Personnel

Dr. Robert D. Coghill

Director of Research, Abbott Laboratories, Chicago, Ill.

(Presented on the occasion of the award of Honorary AIC Membership to Dr. E. H. Volwiler)

THE thinking behind the assignment of this subject is based on the premise that we have, today, a dearth of scientific personnel. Granting the truth of this statement, what, then, can we do to utilize more effectively those scientists whom we already have? There is no question about the seriousness of the position in which we now find ourselves. There is, moreover, no doubt but that it will be much worse before it is materially better. The present short supply of trained scientists can be traced to several causes. The major one is a circumstance with which we can have no particular quarrel—the increased need for these people. This situation is largely the result of the present war situation. The resulting preparedness program has in turn accelerated the tempo of research both inside and outside the government. This has taken the form of increased programs in such places as the Naval Research Laboratories, as well as the letting of many contracts to universities, research institutes, and industrial laboratories. It has served to make virtually non-existent the former small backlog of scientists. Furthermore, the increased production of war material has called for an ever-increasing supply of young engineers as designers and supervisors in the engineering departments and manufacturing plants of industry. When now we add to this increasing demand a progressively decreasing supply for the future, it is easy to visualize the impasse in which we will find ourselves several years hence, for we must realize that industry, government, and the universities all have to draw from the one pool.

In addition to the increased demand for scientists, the situation is further complicated by the occasional depredations of the draft boards and the reserve officer recall programs of the armed forces. While recognizing the rights of the armed forces to recall their reservists, it is very seriously open to question whether it is for the good of the nation as a whole for them to take back scientists and engineers who are in very short supply, only to assign them to duties where their scientific potentials will not only be wasted, but will actually deteriorate. The armed services have

never been noted for the efficient or effective use of the scientists who fall into their hands.

To top it all off, the present draft law will undoubtedly operate in such a fashion as to impede very seriously the training and education of more young scientists and engineers. Its provisions have already served to cut down the enrollments in technical schools, small colleges, and universities, to the extent that our potential supply of engineers alone will be many thousands under the obvious needs of two or three years hence. It appears to be one of the greatest failings of democracy that it seems to imply to most people the idea of identical service by all in time of war. I know of no one who has ever maintained that the life of a scientist is any more valuable to him or to his family than is that of a coal miner, a farmer, or a steelworker. We constitute no sacred class whose right it is to be protected from the hardships of war. But war today is almost completely technological. Victory goes to that nation which can produce the best weapons at the highest speed. When we are waging a war against an enemy with far greater reservoirs of manpower than we can ever hope to have, our only salvation lies in superior technology —which can be summed up in two words—research and production.

Today our country is floundering in a morass of muddy thinking. Most of our legislators in Washington do not have the courage to stand for the only sensible course, the production of more scientists and engineers. They fear that they might lose the support of their constituents at home who do not realize the importance of our technological progress and the only means by which it can be achieved—the training of the men who have to do the technological thinking. I can sympathize with those who do not think it is fair to draft into the army a baseball pitcher who otherwise could make $20,000 a year, and at the same time exempt from service a college chemistry major, allow him to take graduate training, and later hold down a civilian job at a good salary. (Not as much, of course, as a baseball player!) But war is not fair either. When a nation which is inferior in manpower has its back against the wall, its only hope lies in using every man to the limit of his capacity.

Remedial legislation is badly needed if our wartime research and production are not to receive a rude jolt. If fairness to the individual is the paramount question, rather than the best interests of the nation, a national corps of scientists and engineers might be created, to which men of draft age could be assigned upon the completion of their collegiate or graduate training. They could then be called upon to serve, on army pay, wherever their scientific

abilities were most needed at the time, and for a period of servitude equivalent to that of regular draftees. If assigned to any position in which the salary would not ordinarily be paid by the government, the "pseudo-employer" could turn over to the government, monthly, an amount equivalent to the going salary rate for men of their education and experience. This may sound radical, but in my estimation it is much preferable to the prevailing sacrifice of our technological progress to the sacred cow whose motto is, "What's fair for one is fair for another." I fully realize that this suggestion is more or less revolutionary, and probably has some real jokers in it. Nevertheless, it might serve as a starting point for a solution to the problem.

How to Retain Scientists

How best can we utilize that manpower which, by the grace of the Army and the draft boards, we still have? In the first place, we must put up a good fight for those men coveted by the armed forces, both draftees and reserve officers. A few hints may be helpful to some of you. In the case of the draft, the most difficult situation is that of a recent graduate who has been on the payroll for a matter of only a few weeks or months. The question asked is, "How can this man be indispensable to you when you only just hired him?" The answer to this one is to establish the necessity and importance of the position (relative to the war effort), make evident the need of a technically trained man for the job, and finally point out that the man is indispensable because there is no reservoir of technically trained persons upon which you can draw to replace him. It takes four to eight years to train a man of his caliber, an accomplishment which can not be done overnight by industry or anyone else.

In the case of a reserve officer, one generally has eventually to go to the top appeal board in Washington. It has been my limited experience, and that of many others to whom I have talked, that you can not send a boy to do a man's work. The appeal boards pay little attention to a personnel man or a junior research administrator. If the top research man in the organization makes the trip personally, that in itself is the best evidence to the appeal board that the man in question is in the indispensable category. In one case I am convinced that I won the appeal by being able to reach into my pockets and bring out exhibits of the product the man was working on, establish its importance to the armed forces, and point out the defects which had to be corrected before it could meet army specifications. After a long discussion, the appeal board recommended he resign from the service—but it was a close squeak.

Avoid Pirating

Next let me refer to a practice which can not help the overall situation whatsoever. This can be referred to as labor pirating or job-hopping, depending upon your position and point of view. The total supply of scientific manpower will not be increased one whit by this procedure. As a group we would merely be trying to pull ourselves up by our own bootstraps and emulating the residents of a small Irish village who made a rather precarious living by taking in each other's washing. The job-hopper, of course, is attracted by the possibility of receiving a larger salary increase than would be possible under existing government regulations were he to stay where he was. But the new employer, on the other hand, is faced with the near certainty of creating salary inequities within his own organization—with the resulting personnel problems which always accompany such a situation. However, if the man is receiving a definite promotion in responsibilities—one which he could not obtain in his own organization—these remarks obviously do not apply. Otherwise, all that is accomplished, should this practice become widespread, is salary inflation.

New Reservoirs of Supply

If we are to accomplish anything constructive in solving the scientist shortage, we must plan, among other moves, to tap new reservoirs of manpower. One such reservoir is that of the married women. There are a surprising number of such women with bachelor's and even advanced degrees in some field of science. As their families grow up—and the cost of living does likewise — many of these women can be tempted from the home back to the laboratory. To be truthful many of them are pretty rusty and out-of-date. That is only natural. However, they can soon be trained to take over many routine tasks, such as we have in control laboratories, for instance. This will serve to release people having modern and recent educations for more important work. Utilization of such persons will be a real contribution to the shortage of scientists.

Whereas I have just suggested one way of freeing scientific personnel for more important work, there is also a corollary to this method which industry, at least, practices rather generally. This is the provision of adequate non-technical help for the scientists. Good brains are the most expensive and valuable asset of a research organization. It does not make sense to require their possessors to wash their own dishes or run their own errands. Adequate helpers in this category are essential for the effective utilization of our pool of scientists. I washed my own dishes as long as I worked in the laboratory (in a university, of course) but I shrink in horror at the thought of

paying our Ph.D's at Abbott for that kind of work. Going a little further, I feel sure that high school graduates can be trained to do many of the tasks involved in research, leaving the scientists to do the thinking and planning. I am afraid that many organizations are not giving adequate attention to this possibility.

Ease Manpower Shortage with Equipment

Once we have supplied our scientists with all the human hands which they can use effectively, the next thing is to see that they have the best equipment available. Please do not interpret this to mean that I am advocating luxury. An administrator has to use his judgment here as well as anywhere else. I firmly believe, however, that investment in good equipment yields a bigger return than does any other money spent by a research administrator (with the exception of the salaries going to a top few per cent of his key research men). Not only does ample and good equipment pay off purely from the point of view of the extra amount of work which a man can accomplish—I feel that it has a second and more subtle effect, one on the man himself. It gives him the feeling that the management is supporting him—that the work he is performing is important enough, and the confidence of the management in him is sufficient, to warrant this added investment in him. It gives him a sense of power and confidence so that he can overcome the problems which constantly confront him.

As examples of what modern equipment can do, consider the bio- or organic chemist attacking a structural problem today—as compared with his counterpart of twenty-five years ago. The tools available then consisted essentially of a variety of organic reactions and a combustion furnace. The man of today needs much less of his unknown compound to work with—because of the development of microanalysis. He starts out by obtaining an elementary analysis, a molecular weight, an ultraviolet and an infrared spectrum, maybe a potentiometric titration or a polarographic study. Before he starts any degradation reactions, he knows much about his compound. This helps him to select the right reactions to use, and X-ray examination frequently helps to identify small amounts of his fragments. If he has the necessary equipment, he can do a much faster job, with much less material—and with a tremendous saving in labor and expense.

Possibly you would be interested in a case history of the power of money expended for equipment. For the year 1946, our microanalytical department, under Mr. Elmer Shelberg, had an average of 2.5 employees. During the calendar year they performed about 475 C-H determinations, 350 Dumas nitrogens,

300 Kjeldahls, and a hundred or so miscellaneous determinations. At that time Mr. Shelberg discussed with me his plans for modernization of his methods and equipment. This involved plans for research on better methods, including the time necessary for it, as well as the purchase of much equipment. During the succeeding five-year period I never once said "no" to any of his requests, either for personnel, equipment, attendance at scientific meetings, or visitation to other laboratories. All told we spent about $10,000 on equipment. What have been the results?

In the calendar year 1951, with an average of 5.2 employees, the department turned out over 2500 C-H determinations, 1900 Dumas nitrogens, 50 Kjeldahls, 60 halogens, 150 sulfurs, 175 arsenics, and over 500 other determinations of a miscellaneous nature. During the year 1950, one man alone (working a 40-hour week) performed over 2000 combustions. The overall result is that the expenditure of $10,000 for equipment, along with some investment in time, has enabled us to put out almost five times as much work while only doubling our staff—and the breadth of service, as well as its depth, has been greatly increased. Put in other terms, we are getting along with five less employees than we would otherwise have needed. Furthermore, we more than get back the cost of the equipment every year in salary savings. I submit that this is a good example of how modern equipment can help ease our manpower shortage.

In control operations, the use of modern equipment has done much to lower costs and save personnel. Spectroscopic assays have taken the place of many of the older laborious chemical methods, and have even replaced some of the animal assays for vitamin activity. Ever-increasing alertness in the application of these newer tools can do much to save expense and lessen the needs for scientific personnel.

The Development of Chemists

Another method by which we can better utilize the scientists we now have almost goes without saying—the further development of these men. There are various means by which this can be done. For senior men, attendance at national scientific meetings is one of the best means to this end. Industry in general has a pretty good record in this respect. Our university colleagues are also well aware of these benefits, but are less able than industry to put theory into practice because of limited and otherwise restricted budgets. The treatment of its scientists by the government, however, has been most backward along these lines. Their administrators are not wholly to blame, in my experience, as the shortsightedness of the Bureau of the

Budget, and particularly of congressional appropriation committees, virtually puts them in a straight-jacket. I can well remember in the early days of the Regional Research Laboratories when travel budgets were nearly eliminated because a red-faced Congressman from a middle western state pounded on the table at an appropriation hearing and shouted in effect, "Chemists are no good except in the laboratory. They can not discover anything out traveling around. Keep them at home." We did! It has always seemed significant to me that industry, which is supposed to know the value of a dollar and how best to spend it for the ultimate benefit of the stockholders, is comparatively generous and foresighted when it comes to developing their men in this way. Maybe the government should emulate them in this respect.

Attendance at lectures by noted scientists is another source of stimulation and development for both our junior and senior men. Here at Chicago we are peculiarly fortunate in having three great universities. In addition to seminars and meetings of local branches of our national scientific societies, it is also possible to send our scientists to lecture series or courses organized by the faculties of these universities. I know that many industrial scientists in the Chicago area derive great benefit from attendance at such affairs, with the employer generally standing for part or all of the expense involved.

In isolated areas not so fortunately situated with respect to educational facilities, there is another possibility, as exemplified by the practice of the Humble Oil Company at its laboratory in Baytown, Texas. Several times a year they invite a university authority in some field related to their research program to stay with them for several weeks (on a substantial retainer) in order to give an intensive course of study to certain selected men. These men are excused from their regular duties to take the course—which is given on company time. This plan, known as the Humble Plan, is reported to have been very successful, and its sponsors deserve high praise for their foresight and efforts in bringing the university to the man.

The Maintenance of Health

The final aspect of my subject is the maintenance of health, mental and physical, of our scientific personnel. It goes without saying that their physical health must be safeguarded, and I believe that industry, government, and the universities alike have adequate policies to cover the case of the man who has to take sick leave. As to his mental health, the situation is not so good. There are several angles to this subject.

The first of these has to do with his peace of mind. Adequate salaries will do much to promote this state. His working conditions, however,

and his relationships with his colleagues are equally important. Nothing will ruin the output of a scientist quite so quickly as a feeling of resentment or frustration. As we have seen in other respects, our three great classes of employers vary greatly in their attention to this factor. Service with the government is replete with frustration—and in the case of administrators it can drive them almost to the point of distraction. We find there a multitude of petty regulations, almost insuperable barriers in the writing of specifications which will assure the purchase of the type of equipment needed for the conduct of a given project, and business managers who feel no responsibility for the scientific objectives of the laboratory. In fact I know of one laboratory (not the one in which I served) where the morale and output were completely ruined by the officiousness of a business manager who could not be kept under control—and because he was a civil servant, he could not be fired either. There is also a certain amount of this in some universities. In most industrial laboratories, however, particularly in the larger ones, we find it at a minimum. All I can do here is to point out how important it is for the research administrator to watch out for this kind of trouble and to put a prompt end to it should it appear, for we will get the most efficiency from our men when we keep the gripes at a minimum.

The other aspect of the mental health problem is a little more subtle. It is one where industry in general has a bad record, whereas the government and universities have a much more enlightened outlook. It has to do with the vacation problem. The trouble here is a fundamental one. For too long the vacation has been looked upon by industry, as a reward for service, part of one's pay—not as a tool for increasing efficiency and output. Evidence for this statement is the fact that, almost uniformly, the amount of vacation is tied to the years of service in the organization. It is the small minority of employers who have realized that the vacation should be tailored to fit the man's need. Vacation based on seniority tends to give better treatment to the older man—who needs more rest. But it is of no help to the man coming into an organization at middle age. Furthermore, it never takes into consideration the job a man does irrespective of his age. The men working under high pressure, such as department heads and other executives, need a longer period of freedom from stress to regain their equilibrium and composure than does the janitor who sweeps the floors or the technician running routine analyses. Psychologists tell us it is the man who has to make decisions who is apt to acquire the ulcers.

The subtle angle of the problem

is in connection with the senior research man who may or may not be working under pressure, but who is the man we are counting on for new ideas — the most important man in any good research organization. We can not afford to allow him to go stale. Staleness is the state of being tired mentally—a state which precedes physical tiredness and one much more difficult to detect. When stale, a man is going to miss some key observations. He may not quite "gel" on some all-important conception. This can be exceedingly important to the company—but we can never point out or put our finger on what we missed because we never had it. It is a situation very much like that of the baseball player who is never charged with an error of omission—even though the mistake may be the determining factor in losing the game. Two weeks' vacation is just not enough to keep a keen research man on his toes. Three weeks would be marginal, four would be better. The universities have always recognized this. I know of none that allows less than a month of vacation. The government gives four to more than five weeks' vacation to everyone, depending on his length of service. I wonder when industry is going to wake up and realize that for their top research men, as well as their junior and senior executives, the granting of only a two weeks vacation is being penny-wise and pound-foolish. When they come around to the idea that an adequate vacation is a physical need for these men—not a reward for long and faithful service—they may find that they will have more new products and fewer ulcers.

Summary

We have a very limited and dwindling pool of scientific manpower in this country. From this pool, government, our universities, industry, and the armed forces must all be served. This pool is already pitifully inadequate in size, and current governmental and congressional policies are serving to dry up replacements at the same time they make increased demands for more and more scientists. Congress and the armed forces want to eat their cake and have it too. They are killing the goose that laid the golden egg. We, who administer the research in this country, are caught in the squeeze. Our only recourse is to utilize more efficiently those scientists whom we now have. I have tried to point out a few of the many methods available to us for this purpose. The better we practice them, the more chance we have of maintaining United States technology at a sufficiently high level to keep peace in the world.

Acquired: By Acheson Industries, Inc., the properties of the Peerless Printing Ink Company and the Synthetic Lacquer & Varnish Company, adjacent plants in Philadelphia.

Honorary AIC Membership Presented to Dr. Volwiler

DR. ERNEST H. Volwiler, president and general manager of Abbott Laboratories, was presented with Honorary Membership in THE AMERICAN INSTITUTE OF CHEMISTS at a meeting of the Chicago Chapter, held February first at the Society of Engineers meeting rooms, preceded by a reception at the Chicago Chemists' Club.

The principal speaker of the evening was Dr. Robert D. Coghill, director of research of Abbott Laboratories who spoke on "The Utilization of Scientific Personnel." (See page 157).

AIC President Lawrence H. Flett discussed briefly the history of the award of Honorary Membership and the achievements and character of those who have received this award. Dr. Waldersee B. Hendrey, chairman of the Chicago Chapter, presented the certificate. The citation to Dr. Volwiler reads:

> *For his great service as a leader in the chemical profession and for his contributions to better cooperation and understanding among chemists.*

In a brief acknowledgement, Dr. Volwiler stated that "those of us who early in life became inoculated with science have reason to believe that we chose well. The professions give us creative opportunities, and the sense of creation is one of our greatest sources of gratification in life." He warned scientists against trying to apply the rules of scientific principles to the intangible things outside of science. For example, "When it comes to human relations, many of the fixed rules break down, and it is just as important for the scientist as for everyone else to recognize that fact."

Dr. Volwiler was born in Hamilton, Ohio, August 22, 1893. He received the A.B. degree from Miami University, Oxford, Ohio, in 1914, and the Ph.D. from the University of Illinois in 1918.

In 1918, he started with Abbott Laboratories as research chemist. He became chief chemist in 1920; director of research and a member of the board of directors in 1930; vice president in charge of research and development in 1933; executive vice president in 1946, and president and general manager in 1950.

From 1922 to 1924, he edited the *Chemical Bulletin,* official monthly magazine of twelve midwestern sections of the American Chemical Society. He was a major in the Chemical Warfare Reserve from 1925 to

1938, and in 1945 he was the leader of several scientific investigating teams in Germany.

Dr. Volwiler was president of the American Chemical Society in 1950. Other positions which he has held in the Society are: chairman of the Chicago Section, 1924-25; chairman of the Division of Medicinal Chemistry, 1924-25; member of the board of directors of the Chicago Section, 1922-40; councilor, 1926 to the present; councilor-at-large and director-at-large, 1944-48.

He was president of the Chicago Chemists' Club, 1931-32; associate editor of *Chemical Reviews*, 1945-48; chairman of the Scientific Section, American Drug Manufacturers Association, 1927-29; lecturer in chemistry at the Northwestern University Medical School from 1940 to the present, and he was recently appointed a member of the board of trustees of Lake Forest College.

Among the awards Dr. Volwiler has received are: Modern Pioneers Award, 1940; Honor Scroll Award, Chicago Chapter of THE AMERICAN INSTITUTE OF CHEMISTS, 1947; and honorary Doctor of Science degrees from Miami University, 1946, and Northwestern University, 1949.

He is a director of the Armed Forces Chemical Association, the National Vitamin Foundation, the American Foundation for Pharmaceutical Education, and the Liberian Institute for Tropical Medicine. He is a member of the American Chemical Society, American Institute of Chemical Engineers, American Pharmaceutical Association, Chicago Chemists' Club, Cosmos Club, the Chicago Club, Northwestern University Associates, Citizens Board of the University of Chicago, Washington Academy of Sciences, American Association for the Advancement of Science, Chemical Society (London), Society of Chemical Industry, Bureau of the International Union of Pure and Applied Chemistry, Alpha Chi Sigma, Beta Gamma Sigma (Honorary member), Gamma Alpha, Phi Beta Kappa, Phi Kappa Tau, Phi Lambda Upsilon, Sigma Xi, and the Masonic Lodge.

Dr. Volwiler is the author of numerous scientific papers and holds a number of patents singly and jointly on various pharmaceutical compounds and products.

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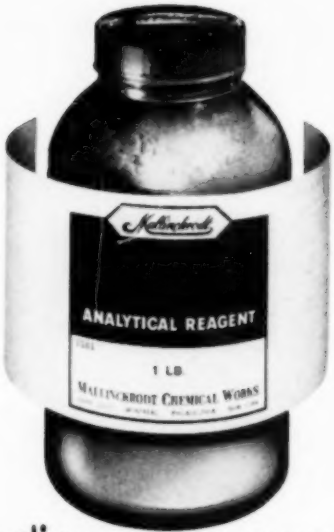

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The MCA Approach to Present Food Laws

G. J. Williams
The Dow Chemical Company

(Presented at the Inter-Industry Conference of the Manufacturing Chemists Association)

THE Manufacturing Chemists' Association, Inc., after a detailed review of existing legislation and various proposals for new legislation relating to chemicals in foods, has reached the following conclusions:

1. Existing legislation vests the Government with adequate authority over the use of chemical additives. In other words, the Government already possesses the means of obtaining adequate information and also possesses all of the remedies that are needed in order to enable the Government to cope with any situation that may arise after a chemical additive has been placed in use.

2. Existing legislation is also adequate to assure that advance information is supplied by industry to the Department of Agriculture, with respect to proposed new uses of pesticides.

3. The one area where it can be argued that present law may need strengthening is in assuring that advance information is supplied by industry to the Food and Drug Administration, with respect to proposed new uses of chemical additives.*

* As used in this proposal, and for the reasons outlined above in the discussion of pesticides, the term "chemical additive" does not include substances covered by the Federal Insecticide, Fungicide and Rodenticide Act of 1947.

4. As a matter of practice, both the food industry and the chemical industry today supply the Food and Drug Administration with a substantial volume of information, on a voluntary basis, with respect to proposed new uses of chemical additives. Speaking to this point in an address which he delivered on Sept. 19, 1951, Commissioner Crawford of the Food and Drug Administration said: "It would not be too much to require by law that all food producers live up to what is being voluntarily done by the conscientious majority."

5. Under the circumstances, the Manufacturing Chemists' Association recommends that consideration be given to new legisaltion containing the following provisions:

(a) On and after a given date (July 1, 1952, for example) there shall be no new use of any chemical additive in or on any food until 60 days after a notice of such intended use has been filed with the Food and Drug Administration.
(b) The notice of intended use may be filed by either the chemical manufacturer or a food processor.
(c) The notice of intended use shall report the applicable pharmacological and toxicological data available. The notice of intended use shall also report the known composition of the chemical additive, a method for the determination of how much of the chemical additive is in or on the food and directions

for the use of the chemical additive with respect to the specific food and the specific use that is proposed.

(d) The notice of intended use shall be accompanied by samples of the chemical additive.

(e) Within the 60-day period between the filing of the notice of intended use and the date when actual use may begin, the Food and Drug Administration may request the person or persons filing the notice of intended use to appear at its offices in Washington or elsewhere ,for such conferences or discussions concerning the intended use as may be appropriate.

6. Under this proposal, once the chemical additive has been placed in use, the Food and Drug Administration will be in a position, in those instances where circumstances so require, to exercise the authority it possesses under existing legislation as discussed in Section 1 above.

7. In our considered judgment, based on eighteen months of study by our Committee on Chemicals in Foods and on numerous consultations with representatives of the food industries, the suggestions set out above represent a fundamentally sound approach to this important problem. We invite the constructive suggestions of governmental agencies, the food industries, the public, and other persons with a contribution to make in this vital and complex area.

(**Note:** Readers of THE CHEMIST are invited to send their comments to the Manufacturing Chemists' Association, Inc., 246 Woodward Building, Washington 5, D.C.)

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The Million Dollar Week End

Louis W. Towle, F.A.I.C.

Technical Director, Apache Powder Company, Benson, Arizona

(Report of the AIC Delegate to the Inauguration of Dr. Richard Anderson Harvill as President of the University of Arizona.)

THE inauguration of Dr, Richard Anderson Harvill as president of the University of Arizona, November 15th to 17th, is referred to as the Million Dollar Week End on the University of Arizona campus.

Dr. Harvill became the fourteenth president in a colorful but dignified ceremony. Visiting college and university presidents, inauguration delegates from two-hundred and fifty colleges and universities and one-hundred and two academic and professional societies, and thousands of alumni were in the city for the celebration.

The theme of the exercises, "Arizona, Land of Promise and Fulfillment", was the subject of a symposium by four former presidents of the University and of the inaugural Luncheon address by the Governor of Arizona.

The pre-inaugural address was given by Dr. James Roscoe Miller, president of Northwestern University, from which Dr. Harvill received the doctorate in 1932. Dr. Harvill in his inaugural address dedicated his administration "to the pursuit of truth, to the education of the University students, and to providing the students with training essential to the performance of all their proper duties."

Following the formal induction, four candidates, among them Dr. James Roscoe Miller, were presented to Dr. Harvill, who conferred on them honorary degrees.

Dr. Harvill came to the University of Arizona in 1934 as assistant professor of economics. He rose successively through associate professor, professor, dean of the Graduate College, and dean of the Liberal Arts College. From 1942 to 1946, he served as Arizona District price executive in the Office of Price Administration.

The inaugural period has been referred to as the Million Dollar Week End because of the dedication of a new Student Memorial building, the opening of the new Gila Pueblo Exhibit, and the exhibition of an "invaluable" collection of paintings loaned by the Samuel H. Kress Foundation.

I have followed Dr. Harvill's career and feel that the administration of the University is in good hands. The Institute may be assured that I appreciate the opportunity to be the AIC delegate on this occassion.

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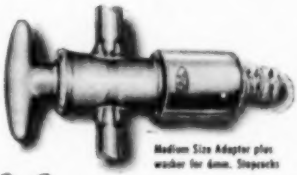

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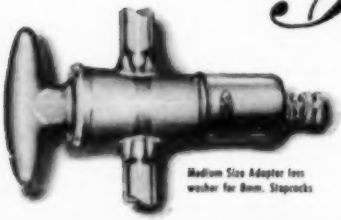

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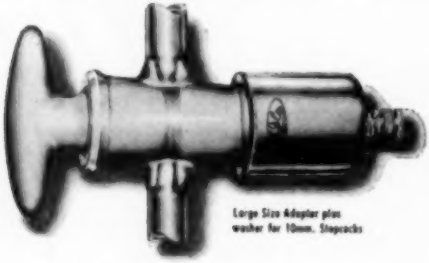

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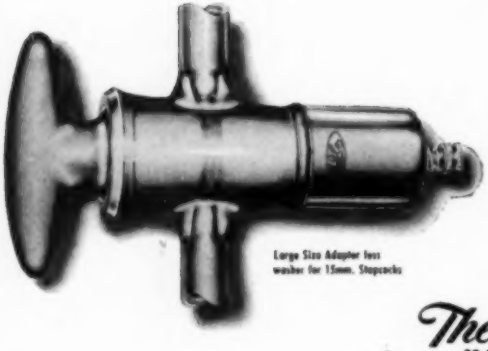

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National Council Meetings

Meetings of the AIC National Council will be held at The Chemists' Club, 52 E. 41st Street, New York, N.Y., at 6:00 p.m., on the following dates:

April 9, 1952
May 6, 1952

Elected: To Fellowship in the New York Academy of Sciences, Dr. Donald B. Keyes, F.A.I.C., in recognition of his outstanding scientific achievements. Dr. Keyes is an adviser of the National Association of Manufacturers' Research Committee, a special consultant to Heyden Chemical Corporation, and a director of Heyden.

AIC Activities

C. P. Neidig, F.A.I.C.

Chicago Chapter

Chairman, Dr. W. B. Hendrey
Vice-chairman, R. F. Davis
Chairman-elect, Dr. B. S. Friedman
Secretary-Treasurer, W. L. Kubie
Representative to National Council, Dr. Gustav Egloff

Dr. Ernest H. Volwiler, F.A.I.C., was presented with Honorary Membership in THE AMERICAN INSTITUTE OF CHEMISTS at a meeting sponsored by the Chicago Chapter on February first at the Western Society of Engineers' meeting rooms, preceded by a reception held in the Chemists' Club, Chicago

Dr. Robert Coghill, director of research for Abbott Laboratories, spoke on the efficient utilization of chemists in research. AIC President Flett recounted the history of the Honorary Membership awards. Dr. W. B. Hendrey presented the Honorary Membership certificate to Dr. Volwiler, who accepted it in a speech which outlined the ideals and purposes of the AIC.

Los Angeles Chapter

Chairman, Wilfred Nobel
Vice Chairman, Dr. Edwin A. Goldsmith
Secretary, Frank Bewley
Treasurer, Spafford M. Gregory
Representative to National Council, Manuel Tubis

Dr. Frederick G. Sawyer, F.A.I.C., who directs the administration of the Air and Water Pollution Research program of Stamford Research Institute, addressed the Los Angeles AIC Chapter, February 14th, on "Chaos Versus Planning in Industrial Air Pollution." Approximately ninety persons attended the meeting in the Mission Room of the L. A. Brewery.

"Polluted air can be planned out of existence if we use all the tools available, "Dr. Sawyer stated. "These include research, money, and a sincere desire to clean up the air. Polluted air is bad advertising, whether for a city, a factory, or a home fireplace. It may signify an indifferent public, poor management, or a bad fireman.

"During the four years that Stanford Research Institute has been studying the Los Angeles smog problem, we have seen industry and pollution regulatory groups accomplish much through cooperation. Many pollution abatement measures have been successful. Much more needs to be done.

"We have been hearing in recent years about a planned economy. Perhaps we should apply these principles to combating air pollution. The economy of an industry should be planned to include the cost of air pollution abatement equipment and operating procedures. Although the majority of recovery installations do not pay their own way, they make up for this by promoting good relations with the public. There is no case on record where a smoking stack made friends . . .

"Research is important in providing us with our many necessities. Certainly clean air is not a luxury. Let us put science to work—but quickly."

New York Chapter

Chairman, Dr. Henry B. Hass
Vice Chairman, K. M. Herstein
Secretary-treasurer, G. A. Kirton
Representative to National Council, Dr. M. J. Kelley

The New York AIC Chapter held a Student Medal Meeting and Buffet Supper at the American Museum of Natural History, March 20th. Medals were awarded to sixteen outstanding students of chemistry or chemical engineering in the New York area. (A complete list of student medalists will appear in the May issue of THE CHEMIST).

Dr. Herman F. Mark, F.A.I.C., director of the Institute of Polymer Research of the Polytechnic Institute of Brooklyn, illustrated, with the aid of a blackboard, lantern slides, and a charming sense of humor, the chemists' ingenious ways of constructing synthetic rubbers, fibres, and plastics from the same basic materials. Examples of these products were passed around for inspection. A little plastic box among them, empty when it started, came back full of pennies. Prof. Mark laughed

heartily, to the delight of the conspirators.

At the brief business meeting, nominations were presented for offices to be filled at the annual election on May 22nd. Dr. Henry B. Hass, chairman of the Chapter, presided and presented the student medals.

Ohio Award for 1952 to be Presented to Dr. Fischer

The Ohio Chapter of THE AMERICAN INSTITUTE OF CHEMISTS will present its Ohio Award for 1952 to Dr. Martin H. Fischer, F.A.I.C., professor of physiology, University of Cincinnati, College of Medicine, Cincinnati, on April 25th, at the Hotel Biltmore, Dayton, Ohio.

The meeting will start in the morning with a plant tour of the National Cash Register Company, followed by the annual business meeting in the afternoon. The award to Dr. Fischer will be presented at the banquet in the evening at the Hotel Biltmore.

New Jersey Chapter to Honor Dr. Hessel

The New Jersey Chapter of THE AMERICAN INSTITUTE OF CHEMISTS will present its first annual Honor Award to Dr. Frederick A. Hessel, F.A.I.C., national treasurer of the Institute, and president of Montclair Research Corporation, Montclair, N. J., at a meeting on May 21st, at the Winfield Scott Hotel, Elizabeth, N.J.

The award is being made to Dr. Hessel "in recognition of untiring efforts and invaluable service to his profession, both as an individual and as a member and officer of THE AMERICAN INSTITUTE OF CHEMISTS."

Dr. Lloyd Van Doren, national secretary of the INSTITUTE, will speak on Dr. Hessel's scientific and professional contributions.

Dr. Lincoln T. Work, incoming president of the INSTITUTE, will present the award. (See page 177)

New York Chapter to Present Honor Scroll to Dr. Snell

The Fourth Annual Honor Award of the New York Chapter of THE AMERICAN INSTITUTE OF CHEMISTS will be presented to Dr. Foster Dee Snell, F.A.I.C., president of Foster D. Snell, Inc., New York, N. Y.

The Honor Scroll, given annually for outstanding contributions to the profession of chemistry, will be presented to Dr. Snell at a dinner meeting in the Hotel Commodore, New York, May 22nd.

Dr. Gustav Egloff, Hon.AIC director of research, Universal Oil Products Company, Chicago, will speak on "Foster D., As I Know Him." Karl M. Herstein, F.A.I.C., of Herstein Laboratories, New York, and chairman-elect of the New York Chapter, will present the scroll.

Washington Chapter to Honor Dr. Kline

The Washington Chapter of THE AMERICAN INSTITUTE OF CHEMISTS will present its first annual Honor Award to Dr. Gordon M. Kline, F.A.I.C., chief of the Organic and Fibrous Materials Division of the National Bureau of Standards, at a dinner meeting on April 22nd, at the Roger Smith Hotel, Washington, D.C.

The Organic and Fibrous Materials Division conducts research and development programs concerned with organic high polymers including textiles, rubber, paper, leather, and plastics.

Dr. Kline is internationally known for his researches in organic plastics, polymerization of olefins, dopes for aircraft, and adhesives. He is the technical editor of *Modern Plastics* and the editorial director of *Modern Plastics Encyclopedia*. Recently Dr. Kline supervised the work on the preservation of the originals of the Declaration of Independence and the Constitution of the United States in special helium-filled glass enclosures on display in the Library of Congress.

Dr. Milton Harris, F.A.I.C., of the Harris Research Laboratories, will speak about Dr. Kline and his work. Following the presentation of the Honor Award, Dr. Kline will deliver an acceptance address.

Will You Come?

April 3rd. Washington Chapter. Luncheon. 12:30 p.m. Jefferson Hotel, 1200-16th St., N.W., Washington, D.C. Chairman Louis N Markwood will conduct the meeting.

April 4th. Chicago Chapter Meeting. Western Society of Engineers, 84 East Randolph St., Chicago. Speaker: Dr. Donald J. Bergman, Chief Engineer, Universal Oil Products Co. Subject: "Advancing Yourself in the Chemical Engineering Industry." Dinner ($2.25), 6:30 p.m. For reservations, write Mary Fuson, Armour Research Foundation, Technology Center, Chicago 16, Ill.

April 16th. New Jersey Chapter. Laboratory Tour of Thomas A. Edison, Inc. West Orange, N.J. 2:00 p.m. Reservations to A. J. Martin, Barrett Research Lab., Edgewater, N.J.

April 22nd. Washington Chapter. Presentation of first annual Honor Award to Dr. Gordon M. Kline. Dinner 7:00 p.m. Tickets $4.50. Roger Smith Hotel, Washington, D.C. Speaker: Dr. Milton Harris on "Dr. Kline and His Work." Presentation by Dr. Harry L. Fisher. Reservations to Paul E. Reichardt, Secretary, Washington Gas Light Company, 1100 H. St., N.W., Washington, D.C.

April 25th. Ohio Chapter. Annual Meeting. Ohio Award to Dr. Martin H. Fischer of the University of Cincinnati. Plant tour of National Cash Register Company. Banquet, Hotel Biltmore, Dayton, Ohio. Secretary, Harold M. Olson, Harshaw Chemical Co., 1945 East 97th St., Cleveland 6, Ohio.

May 1st. Pennsylvania Chapter. Presentation of Student Medals to outstanding college seniors in area. Speaker to be announced.

May 2nd. Chicago Chapter meeting. (write W. L. Kubie, Sec.-Treas, AIC Chicago Chapter, c/o Darling & Co., 4201 S. Ashland Ave., Chicago 9, Ill. for details.)

May 7-8th. Annual Meeting of THE AMERICAN INSTITUTE OF CHEMISTS. Hotel Commodore, New York. (see page 143 for program.)

May 21st. New Jersey Chapter. Presentation of first Honor Award to Dr. Frederick A. Hessel. Student Medal Awards. Speakers: Dr. Lloyd Van Doren, Secretary AIC, on "Dr. Hessel's Scientific and Professional Contributions;" Dr. W. D. Woodward, Psychiatric Consultant, American Cyanamid Company, on "Personality Factors in Success and Failure."

Presentation of Award, Dr. Lincoln T. Work. Winfield Scott Hotel, Elizabeth, New Jersey. 7:00 p.m.

May 22nd. New York Chapter, Annual Meeting. Award of Fourth Honor Scroll to Dr. Foster Dee Snell. Speaker: Dr. Gustav Egloff on "Foster D., As I Know Him." Presentation by Karl M. Herstein. Dinner, Hotel Commodore, N.Y.

June 6th. Chicago Chapter meeting. (See May 2nd item above.)

AIC Members who are in Washington, D.C., can find out about Washington Chapter meetings by telephoning the Chapter secretary, Paul E. Reichardt, at Republic 3275, Extension 221.

AIC Members who plan to visit New Orleans, La., are invited to get in touch with National Council Representative, Harold A. Levey, 311 Audubon Blvd., New Orleans, La.

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Organic Chemist: M.A.I.C., Ph.D., 3 years industrial research and development. Experience in pharmaceuticals and surfactants. Seeking position offering opportunity for advancement in N.J., Conn., or metropolitan N.Y. Box 42, THE CHEMIST

Administrative Chemist: F. A. I. C. Fats and oils, antioxidants, foods, vitamins, pharmaceuticals. Supervisory activities; budgetary and cost controls, patents, pilot and plant production, technical service and foreign activities. Location immaterial. Box 44 THE CHEMIST.

Chemist. B.S. 7 years industrial work, organic research and analytical chemistry, production and supervisory. Box 46, THE CHEMIST.

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For Your Library

Statistical Methods for Chemists

By W. J. Youden, John Wiley & Sons, Inc. 1951 *x* + 126 *pp.* 5¾ *x* 9. $3.00

Linear Computations

By Paul S. Dwyer, John Wiley & Sons, Inc. 1951. *xi* + 344 *pp.* 5¾" *x* 9". $6.50

The mathematical theory of statistics is full of beautiful theorems which can be proved rigorously. However, neither the theorems nor their proofs are of very great interest to anyone who is not a specialist in the field of mathematical statistics. Recognizing this point, Dr. Youden has written his book for the people who make measurements and interpret experiments. The application of statistical methods to the design, interpretation, and evaluation of experiments is becoming increasingly important for the practical chemist. To have on hand, therefore, a book which dispenses with theory and gets right down to brass tacks is exceedingly valuable.

Dr. Youden explains the applicable parts of statistical analysis and illustrates clearly the actual methods of applying these to chemical experiments. The book contains ten chapters, a bibliography, and an appendix with four tables, all of immediate practical use. Anyone having to do with the planning of experiments or the analysis of the data to deduce from them valid conclusions will find the book of enormous use.

Almost everything that was said above regarding statistical methods applies equally well to Dr. Dwyer's book on Linear Computations. The application of statistical methods requires, unfortunately, a certain amount of drudgery in the way of calculations. This drudgery is somewhat lightened by the use of desk-calculating machines. However, the obvious performance of the four arithmetical operations by no means exhausts the possibilities of these machines. It is part of Dr. Dwyer's objective to point out how their full capabilities can be utilized to simplify computations and to carry the exposition through all of the calculations required for the solution of simultaneous linear equations and sets of the same.

While the book is in part intended as a text book, it can also be used and was designed in part as a reference for individual workers or for a home study course. It is highly recommended for all of these purposes.

—Karl M. Herstein, F.A.I.C.

Paint and Varnish Production Manual

Edited by V. C. Bidlack, F.A.I.C. and E. W. Fasig, F.A.I.C., John Wiley & Sons, Inc. 1951. 288 *pp.* 6" x 9". $6.50.

An excellent discussion of the factors which must be considered in the management of paint and varnish production is presented in this work, but the chemist who seeks technical information will be disappointed. The book is the culmination of a project started several years ago by the Federation of Paint and Varnish Production Clubs and must, therefore, be considered authoritative. Among the topics considered are Materials Handling, Plant Layout and Equipment, Production Planning and Control, Personnel, Cost Accounting and Safety. The chapters on raw materials and types of coatings are brief and elementary but they carry extensive references to Mattiello's classical work in this field and also to articles which have appeared in the *Official Digest*. The coverage of the unit processes and equipment for paint and varnish production such as pigment dispersion, thinning, tinting, can filling, etc. are adequate for an executive, and the engineer can make good use of the bibliography.

This book is well worthwhile to those who are (or hope to be) engaged in the management of paint production.

—Harry Burrell, F.A.I.C.

Superfluids

Vol. I. By Fritz London. Elsevier Press, Inc. 161 *pp.* 6" x 9¼". 1950. $5.00

This book contains an interesting summary of phenomena associated with liquid helium below 2.19° absolute, and mercury and alloys at temperatures near absolute zero. Dr. London develops a mathematical extension of electric theory for the super conductory state.

—Dr. John A. Steffens, F.A.I.C.

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The Chemistry of Uranium

Part I. The Element, Its Binary and Related Compounds. Edited by Joseph J. Katz, Chem. Dir., Argonne National Lab., and Eugene Rabinowitch, consultant to Argonne National Lab. McGraw-Hill Book Co., Inc. 1951. 609 *pp.* 6" *x* 9". $7.25.

This volume, belonging to the National Nuclear Energy Series, Manhattan Project Technical Series, is the first half of a comprehensive treatise on uranium chemistry. Dealing only with the "dry" chemistry of this much-investigated element, the book presents results obtained at the atomic energy project, many of them not published before, as well as a critical survey of the open literature on the subject. There is much information here that has not found its way through regular publication channels, which should be of great use to those working in the field; and to other chemists the book will present a clear and detailed picture of uranium chemistry.

—Dr. Frederick A. Hessel, F.A.I.C.

Chemical Thermodynamics

By Frederick D. Rossini. John Wiley & Sons, Inc. 1950. 514 *pp.* 6" *x* 8½". $6.00

This volume contains an esoteric treatment of thermodynamics. A portion of the author's extensive experience with the thermal properties of hydrocarbons is incorporated, forming an introduction to petroleum cracking. It includes references, tables, and sources of data. As a text it is preferable for advanced students.

—Dr. John A. Steffens, F.A.I.C.

Chemical Books Abroad

Rudolph Seiden, F.A.I.C.

Wissenschaftliche Verlagsgesellschaft, Stuttgart 1: *Die Fettstoffe des Gerbens,* by H. Gnamm, 2nd ed., 248 pp., DM 16. A well-organized survey of the oils, fats, and impregnating agents used in the leather industry.

Karl F. Haug Verlag, Saulgau (Wuertt.): *Medizinische Biochemie,* by M. Polonovski, 5th ed., 726 pp., 60 ill., DM 48. An established textbook on medicinal biochemistry, first published in France and now translated into German. It has been brought up to date, but disregards new, unproved theories and hypotheses.

Verlag Hans Huber, Bern (Grune & Stratton, N. Y.): *Therapeutische Chemie,* by Th. Wagner-Jauregg, 1949, 272 pp., Sfr. 39. Chemotherapeutics, antibiotics, and disinfectants used in the treatment of infectious diseases, are arranged in groups according to their chemical structure and described from a systematic, scientific point of view. In each case, the "why" and "how" of the therapeutic action are emphasized. Many new compounds, not yet used in medicine, are included in this volume, making it valuable to the research worker in the pharmaceutical industry. Very complete are the (1) chemical compounds, (2) medicinal-biological, and (3) authors indexes.

Ferdinand Enke Verlag, Stuttgart-W: *Kieselgur,* by F. Kainer, 2nd ed., 283 pp., 31 ill., DM 35. A monograph on kieselgur, its occurrence, production, processing, properties, and many uses in various industries. A final chapter covers the latest chemical, analytical, and physical investigation methods; hundreds of patents, German, American, and others are cited. • *Neuere massanalytische Methoden,* by E. Brennecke, K. Fajans, N. H. Furman, R. Lang, and H. Stamm, 3rd ed., 347 pp., 30 ill, DM 49. A survey of the newer titrimetric methods developed during the last three decades (the 2nd ed. of 1937 was translated into English). The methods are described so as to make it possible for the chemist to use them in his analy-

tical laboratory. • *Handbuch der praeparativen anorganischen Chemie,* by G. Brauer and 30 experts. Of the 8 parts of this handbook of the preparative inorganic chemistry ("in statu nascendi"), the first two parts — each 160 pp., each DM 21 — became available late in 1951. This new work, when finished, will replace the inorganic section of the now unavailable standard book of Vanino. *Part 1* discusses preparative methods in general, H,D, H_2O, H_2O_2, F, HF and F compounds; *part 2,* Cl, Br, I, O, O_3, S, and Se. • *Chemische Textilfasern, Filme und Folien,* by R. Pummerer. This, too, is a new handbook — dedicated to chemical textile fibers, films, and foils—; 7 or 8 parts of 160 pp. each (each part DM 20) are planned. *Part 1* discusses cellulose, cellulose fibers, and Chardonnet rayon.

Sir Isaac Pitman & Son, Ltd., London: *Theoretical Pharmaceutical Chemistry,* by C. G. Lyons and F. N. Appleyard, 2nd ed., 602 pp., 30 s. The book, as its title indicates, is limited to the pharmaceutical aspects of chemistry, which it presents in a brief (sometimes too brief), but always clear-cut manner.

Walter de Gruyter & Co., Berlin W 35: *Methoden der Lebensmittelchemie,* by R. Strohecker, 3rd ed., 208 pp., 45 ill., DM 12. A careful selection of proved physical and chemical methods for the investigation of foodstuffs and beverages. • *Hormone,* by G. Koller, 2nd ed., 187 pp., 60 ill., paper covers, DM 2.40. A competent survey of hormone physiology and of the various hormones of plants and animals. • *Warenkunde, I and II,* by K. Hassak, E. Beutel, and A. Kutzelnigg, 7th ed., in 2 volumes, 116 and 143 pp., respectively, paper covers, each DM 2.40. An illustrated review of industrially used inorganic raw materials, coal, and mineral oil (vol. 1) and of organic raw materials (vol. 2).

Verlag Chemie, Weinheim|Bergstrasse: *Gmelins Handbuch,* 8th ed., paper covers. Two more volumes of this standard work have become available: *No. 41 Titan* (including its alloys and compounds), 1951, 481 pp., 100 ill., DM 113, and *No. 3, part 2: Sauerstoff* (occurence and technology of O), 218 pp., ill., DM 65. • *Papierchromatographie,* by F. Cramer, 1952, 81 pp., 49 ill., paper covers, DM 9.80. Theory and practical application of paper-chromatographic analytical methods are thoroughly explained in this easily read monograph.

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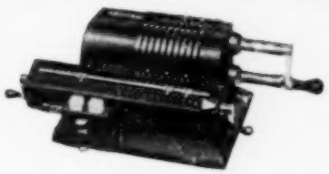

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Verlag Eder, Kuehnhausen/Traunstein Obb.: *Deutscher Faerberkalender 1952,* $2.25. The 56th annual edition of the German dyer calendar, for 1952, contains — like its predecessors — timely articles on dyes and textiles as well as tables describing the properties of dyes and of chemicals used in dyeing.

Information

"Book List." Mapleton House, 5415 17th Ave., Brooklyn 4, N.Y.

"Rand Seal for Valves." Samples and information. Rodic Chemical & Rubber Corp., Allen Ave., New Brunswick, N.J.

"New and Revised ASTM Standards." September *ASTM Bulletin.* American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa.

"The Isomers of 4-Phenyl- and 4-Cyclohexylcyclohexanols." By H. E. Ungnade, F.A.I.C. Reprints from J. Organic Chemistry. 13, 361. Request it from Highlands University, Chem. Dept., Las Vegas, New Mexico.

"How to Do Business with the AEC." Fifteen cents. Supt. of Doc., U.S. Gov. Printing Off., Washington 25, D.C.

"Menlo Fluoretor." Information. Menlo Research Lab., Box 522, Menlo Park, California.

"Crystallography"—4 16-mm. films produced under direction of Dr. L. Kofler, of Vienna. Information. U.S. Marketing Council, Inc., 14 E. 28th St., New York 16, N.Y.

"Electronic Relays." Information. The Emil Greiner Co., 20-26 N. Moore St., N.Y. 13, N.Y.

"Baldwin Supertex Belting." Catalog. Baldwin Belting, Inc., 74 Murray St., New York 7, N.Y.

"Prufcoat Heavy-Duty Primer P-50." Technical Bulletin Sheet No. 015. General Sales Manager, Prufcoat Labs., Inc., 50 E. 42nd St., New York 17, N.Y.

"The Crisis in Sulphur." Booklet. By L. M. Williams, Jr., president, Freeport Sulphur Co., 122 E. 42nd St., New York 17 N.Y.

"Diamino Diphenyl Sulfone." Pamphlet. L. F. Loutrel, Jr., Merrimac Div., Monsanto Chemical Co., Everett, Mass.

"Silicone Rubber O-Rings." Tech. Data Sheet No. 102. Frederick S. Bacon Labs., 192 Pleasant St., Watertown 72, Mass.

"Desiplate." Circular support for holding crucibles in a desiccator. Leaflet. Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Pa.

"How to Prepare for a Career in Science." Booklet by Dr. H. B. Hass, F.A.I.C. Request it from Information Dept., General Aniline & Film Corp., 230 Park Ave., New York 17, N.Y.

"New Directory." Scientific Apparatus Makers Association, 20 No. Wacker Dr., Chicago 6, Ill.

"Safety Measures for Nitrogen Tetroxide." Bulletin. Request by writing Product Development Dept., Solvay Process Div., Allied Chemical & Dye Corp., 40 Rector St., New York, N.Y.

Equivalent Valves Manual." 170-pp. Revised and enlarged. Price $15.00. Hooper Publishing Co., 545 Sansome St., San Francisco 11, Calif.

"Descriptions of 25 Patents Released for Public Use by U.S. A.E.C." U.S. Atomic Energy Commission, Washington 25, D.C.

"Industrial Uses of Radioactive Fission Products." Report. 102 pp. $1.50. Project 361, Stanford Research Institute, Stanford, California.

"Condensed Data on Wrought Iron Pipe." Bulletin. Engineering Service Dept., A. M. Byres Co., Pittsburgh, Pa.

"New Carbon Material for process Industries." Information. Parlam Corp., 336 Canal St., N.Y. 13, N.Y

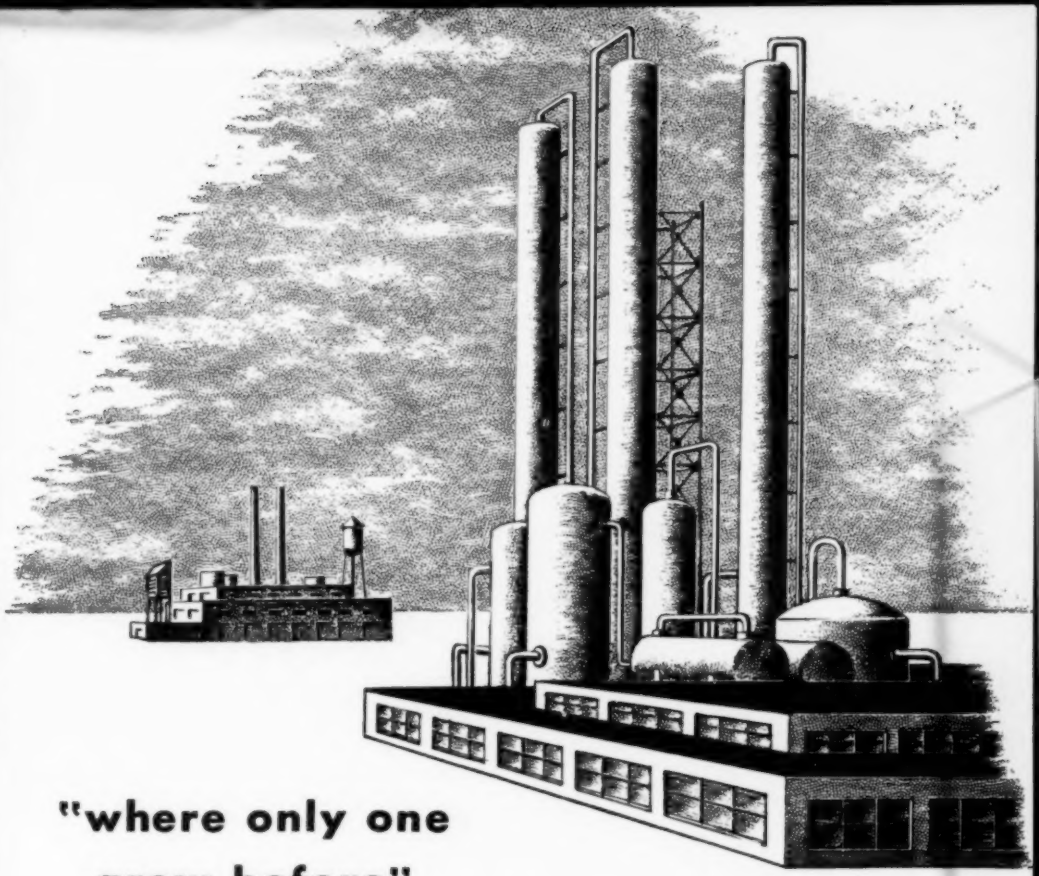
"Important Books for the Chemical Process Industries." List. Chemonomics, Inc., 400 Madison Ave., N.Y. 17, N.Y.

"List of Research Reports for Sale." U.S. Atomic Energy Commission Reports. Office of Technical Services, Department of Commerce, Washington 25, D.C.

"Safe Handling of Radioactive Isotopes." NBS Handbook 42. 30 pp. 15 cents. Sup't. of Doc. U.S. Gov. Printing Off., Washington 25, D.C.

"Maximum Utilization of Employed Manpower." $1.00. Industrial Relations Section, Princeton University, Princeton, New Jersey.

"Nitrosyl Chloride." 80-page book. Write on company stationery to The Solvay Process Div., Product Dev. Dept., Room 1001, 40 Rector St., N.Y. 6, N.Y.



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Honored: Dr. Raymond E. Kirk, F.A.I.C., dean of the Graduate School and head of the Department of Chemistry at the Polytechnic Institute of Brooklyn, when the Polytechnic Alumni Association Citation was presented to him, March first, at the Association's 89th annual dinner. He was cited for "his administrative skill and courage which have built greatness into the Department of Chemistry and the Graduate School of the Brooklyn Polytechnic Institute" and for his "sound and progressive leadership in the American Chemical Society and THE AMERICAN INSTITUTE OF CHEMISTS."

Dr. Donald F. Othmer, F.A.I.C., head of the Department of Chemical Engineering, presented the award, which marks the anniversary of Dr. Kirk's twenty years of service at Polytechnic. In that period the Department of Chemistry has grown from an enrollment of forty-one graduate students in 1933 to a total of 615 in the present 1951-52 academic year.

In his work at Polytechnic, Dr. Kirk has emphasized the development of a center for the training of industrial personnel, because of the concentration of chemical industries in and around New York and the resultant demand for graduate work. Another major contribution to chemistry is being made by Dr. Kirk as editor with Dr. Othmer of *The Encyclopedia of Chemical Technology*. Seven of the planned fourteen volumes of this work have already been issued.

Dr. Kirk was a recent vice president of THE AMERICAN INSTITUTE OF CHEMISTS, and he is a member of the board of directors of the American Chemical Society. In May, 1951, he received the Honor Scroll of the AIC New York Chapter.

Symposium: On Instrumental Methods of Analysis in the Non-Ferrous Industry, to be held at the Society of Western Engineers Building, 84 East Randolph St., Chicago, Ill., on May 13th. Robert Raisig, Apex Smelting Co., 2537 W. Taylor St., Chicago 12, Ill., is chairman.

New Position: Dr. Robert Newell DuPuis, F.A.I.C., assumed on March first the newly-created post of director of research and development of Philip Morris & Co., Ltd., Inc., of Richmond, Virginia. Dr. DuPuis was formerly research and development manager of S. C. Johnson & Son, Inc., of Racine, Wisconsin.

Golden Wedding: Observed in November by Mr. and Mrs. Gabriel d'Eustachio, of 175 Water St., Perth Amboy, N. J. Mr. d'Eustachio, retired from General Cable Corporation, is both a Charter and a Life Member of THE AMERICAN INSTITUTE OF CHEMISTS.

Annual Conferences: Of The Chemical Institute of Canada, scheduled for Montreal, June 2-4, 1952; Windsor, June 3-7, 1953; Toronto, June 20-23, 1954; and Quebec, May 30-June 1, 1955.

New Consulting Firm: Formed by Clifford A. Hampel, F.A.I.C., and R. Scott Modjeska, F.A.I.C. The Hampel-Modjeska Laboratories will use the facilities of the Scientific Control Laboratories, 600 S. Blue Island Ave., Chicago, Ill., until new quarters are available. The organization will conduct research and development studies, and consulting work for industry and government in fields which include industrial chemicals, electrochemical and metallurgical processess and products.

Organic Section: Formed by the Solvay Process Division, Allied Chemical & Dye Corp., to develop and manufacture a line of organic chemicals and related products. The new section is under the direction of Dr. C. S. Fazel, F.A.I.C., recently appointed a vice president of Solvay, whose office is at 61 Broadway, New York, N. Y. The first project is to construct a plant, to cost approximately $5,000,000., near Orange, Texas, for the manufacture of ethylene glycol and ethylene oxide. Operation of this installation will offer employment to about one-hundred and twenty-five people.

Clinical Chemists Certified: The American Board of Clinical Chemistry, Inc., has issued certificates to forty-seven applicants. These are the first certificates to be issued. To date, the Board has received nearly four-hundred requests for certification applications, and it expects that many additional requests will be filed before July 1, 1952, the date upon which the certification without examination will be discontinued under the present By-laws. Requests for such forms, accompanied by the full name of the individual and the required fee of $1.00 may be addressed to the secretary, Dr. Jos. W. E. Harrisson, F.A.I.C., 1921 Walnut Street, Philadelphia 3, Pa.

Appointment: By the Ray-O-Vac Company, Madison, Wis., of Dr. Johan Bjorksten, F.A.I.C., as head of research of Ray-O-Vac, manufacturer of flashlights and batteries, and subsidiary companies. Since 1944 Dr. Bjorksten has headed his own company, Bjorksten Research Laboratories. Prior to that, he held the positions of chemical director, for Quaker Chemical Products; chief chemist, Ditto, Inc., and in charge of development for the Pepsodent Company.

Recalled: To naval service, Carl E. Schweickert, M.A.I.C., where he is Lt. Commander. He was formerly with Battelle Memorial Institute, Columbus 1, Ohio.

Vice President: Dr. Maurice L. Moore, F.A.I.C., who was elected to this office by the Board of Directors of Vick Chemical Company of New York, Greensboro, N. C., and Philadelphia. Dr. Moore received the B.S. and M.S. degrees from the University of Florida, and the Ph. D. degree from Northwestern University. He was formerly with Sharp & Dohme, Inc., Frederick Stearns & Co., and Smith, Kline & French Laboratories. As vice president of Vick, he coordinates and integrates the research and development activities of the subsidiary companies.

Plant Planned: By Hercules Powder Company, for the production of phenol, para-cresol, and acetone, by hydrocarbon oxidation. The plant will be located in the Delaware River industrial section and will cost $8,000,000.

Silicone Exhibit: Being shown in various industrial centers by the Dow Corning Corporation, Midland, Michigan, to demonstrate the many uses and the unique combination of properties of the silicones.

Speaker: George F. Garnatz, F.A.I.C., director, The Kroger Food Foundation, Cincinnati, Ohio, before the Manufacturing Chemists' Association, Inc., in New York January 15th, on "Trends in Food Quality."

Elected: By The Franklin Institute, Philadelphia 3, Pa., S. Wyman Rolph as president. He is also president of Stokes Molded Products Inc., and president of the Electric Storage Battery Company.

Increased Production: Planned by Fine Organics, Inc. Nicholas M. Molnar, F.A.I.C., president, announces that construction will start at once to enlarge the building at the Lodi, New Jersey, plant. Additional process equipment orders have been placed and funds have been allotted to expand the company's sales organization on a national scale.

Returned: Louis N. Markwood, F.A.I.C., of the National Production Authority, from a trip to Geneva, Basel, Berne, Lucerne, Milan, Rome, Genoa, the Italian Riviera, Paris and London.

Industrial Waste Conference: To be held May 7th to 9th, in the Purdue Memorial Union, Purdue University, Lafayette, Indiana. Approximately fifty papers will be presented on subjects dealing with industrial wastes and their treatment. Hotel reservations can be made at the Purdue Union Club, Fowler Hotel, Cedar Crest Hotel, and Morris Bryant Hotel. Those interested are welcome.

Condensates

Ed. F. Degering, F.A.I.C.

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Two out of three of the human inhabitants of this place called earth, according to the Department of Nutrition of the National Live Stock and Meat Board, suffer at present from malnutrition, ranging from mild malnutrition to actual famine.

The high incidence of lysozyme in the infected areas of the body, according to Dr. Gertrude Gottschall, biochemist of Columbia University, is a sign that the white cells are on the job defending the body against invasion.

Research as the exploration of the unknown is necessarily focused on the new, and its orientation is toward the future, and toward continual change. True, it produces what we glibly call "laws of nature." But these are no more than generalizations which try to summarize and to generalize the characteristics of a great number of observed phenomena. They are not laws in the ordinary sense of the term. Once a new phenomenon is uncovered, the task of research is not to adjust it to fit immutable laws, but to revise the alleged laws if necessary in order to accommodate the new-found facts. There is no law of physics which cannot be overturned by an individual on his own initiative, if he can prove a set of facts which contradict it. If there could be found in the world a greater contrast than this freedom and dynamic adaptability as against frozen political ideology, such as that which is promulgated by . . . the Kremlin, I do not know what it is.

—Vannevar Bush

Two new synthetic fibres, one made from cottonseed protein and the other from chemically modified cellulose, have been developed at the U.S.D.A. in New Orleans.

Are we as scientists, great people in science? . . . Somehow we need a different type of philosophy with respect to the world in which we live or perhaps we need some scientists of a different type.

—A. A. Noyes, Jr.

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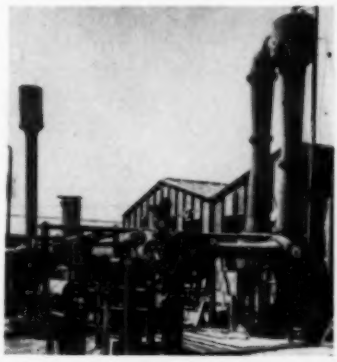

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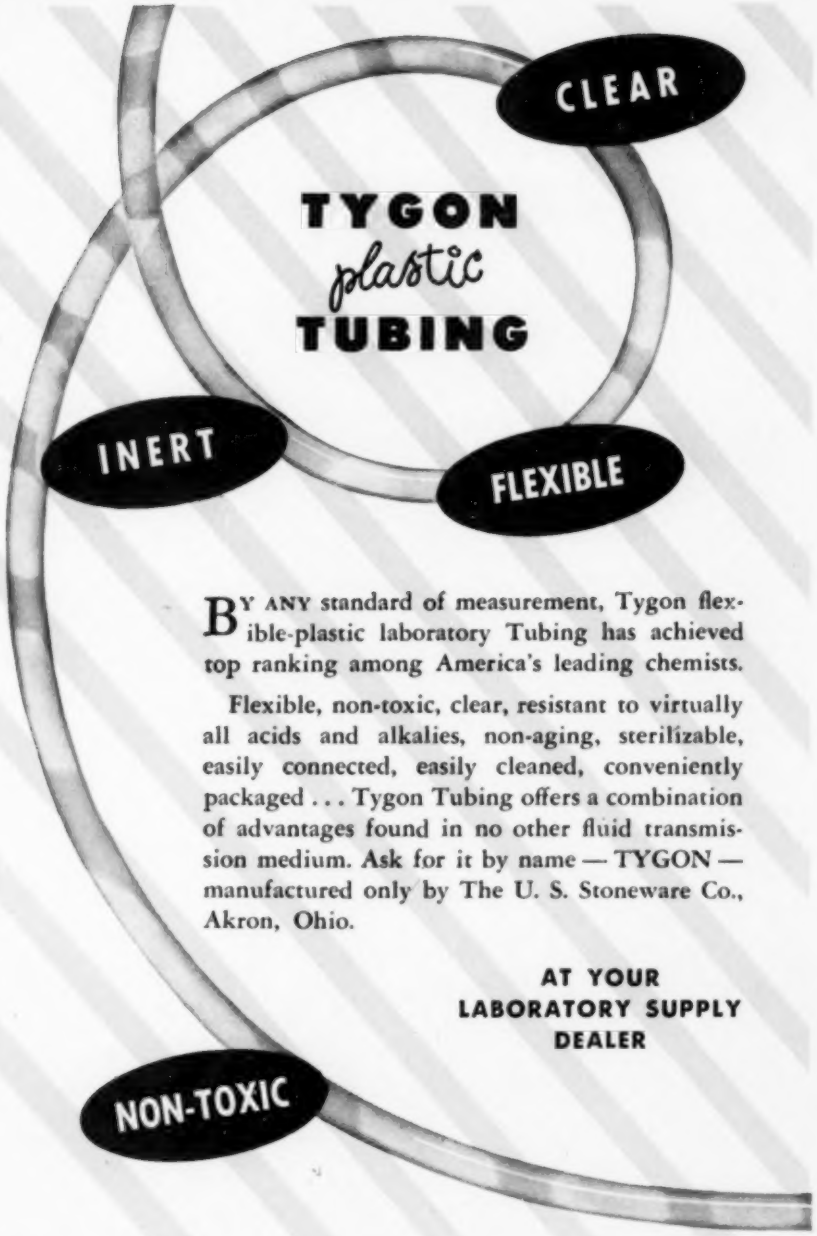

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